

Complete engine-off, anti-idling solutions

- 1) Heavy Duty Truck engine-off heating and cooling systems
 - Total anti-idling solution
 - Eliminates the need for climate control related idling
- 2) Passenger Car and Light Truck engine-off parking heaters
 - The logical alternative to remote starting devices
- 3) Fuel Cell APU - Total engine-off power solution
 - The future of anti-idling technology for trucks, buses and passenger cars

Heavy Duty Truck Engine-off Heating and Cooling Systems

- **Fuel Operated Parking Heaters**
 - Proven technology, in production for over 30 years
 - In-cab, engine-off overnight heating solution
 - Approximately 1% of idling truck emissions
- **Parking Cooler**
 - Totally new, completely innovative product
 - In-cab, engine-off overnight cooling solution
 - ZERO emissions!



Heavy Duty versus Light Duty Idling

- More work needs to be done, *but* solutions are in place to solve heavy duty truck idling
 - Legislation moving forward
 - Positive progress being made
 - Technology is commercially available

BUT...

- Light duty vehicle idling is the new and upcoming challenge
- Data shows that this segment will represent over 70% of today's heavy duty vehicle idling emissions by 2010 and will continue to grow
- All the efforts to eliminate heavy duty vehicle idling may be offset by light duty idling



Facts about unattended idling passenger vehicles



An unattended idling vehicle obtains **ZERO MPG**

In 2004 over 4 million remote starters were installed in North America. The practice of remote vehicle starting and subsequent unnecessary idling is growing at an alarming rate 12.6% annually. – source Martec Study



Without a change, in 2010 OEM and aftermarket remote start idling will contribute the following annual emissions:



195,350 Tons of CO

803 Tons of NO_x

15,673 Tons of HC

6,363,698 Tons of CO₂

-Source EPA Approved Laboratory



The Tonnage figures shown above do **NOT** include emission data from passenger vehicles idling not equipped with an OEM or aftermarket remote starting device.

Webasto Summary:

- Privately Owned
- Not reliant on public funding
- In business since 1901
- Invests majority of profit into new technologies



Anti-Idling legislation and enforcement



Current anti-idle legislation is focused mainly on the Heavy Duty Truck industry.



When anti-idle laws are passed, enforcement is an important consideration.



Idle reduction in passenger vehicles will lead to improved air quality.

BlueHeat® operates and functions **WITHOUT IDLING.**

Light Duty Vehicle Anti-idling Solutions



Fuel Operated Parking Heaters (BlueHeat ®) eliminates a consumers desire to idle a vehicle for the purpose of heating

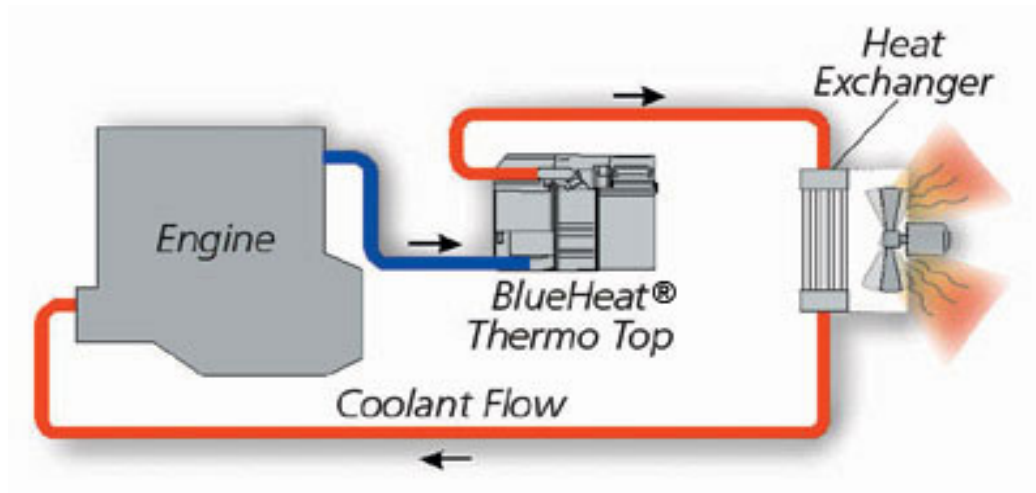
- Technology available today
- Widely used throughout Europe – *In use on millions of vehicles today*

Emissions are reduced in two vital ways:



1. **Vehicle's engine does not need to idle for heat**
 - Webasto heater produces approximately 4%* of idling vehicle emissions (* HC + NO_x)
2. **A preheated engine will always produce less pollution at start up**

How it works:



BlueHeat® operates and functions WITHOUT IDLING.

Fuel Cell Auxiliary Power Units (APUs)

Next Generation of clean engine-off power for all modes of transportation

- Total engine independent power solution
 - Truck, Bus, and Passenger Car
- Solves all cooling, heating, and electrical power needs
- Completely eliminates need to idle
- Technology developed internally with no outside sources of funding used or required